SENCORE **TR-139**

**TRANSISTOR TESTER**

# AT LAST -- An IN-CIRCUIT Transistor Tester That REALLY Works!

**checks all transistors, diodes and rectifiers out of circuit too for accurate AC beta and $I_{cbo}$ leakage.**

**TR139 ONLY $89.50**

## YOUR BEST ANSWER FOR SOLID STATE...

### Servicing...Production Line Testing...Quality Control...Design...

Solid state circuits are now being used everywhere . . . TV, Hi-Fi, radios, phonographs, tape recorders, stereo, and now even color TV — and more coming along every day. The only way you can stay on top of the service problem is with a fast, efficient, in-circuit transistor tester.

Since most of this solid state equipment has the transistors soldered directly to the printed circuit board, it is no longer practical to check transistors the old-fashioned way — pulling each one to test or substitute for it. New, faster, more accurate trouble-shooting techniques are called for.

To meet the problem, Sencore has developed a new, modern, **in-circuit** transistor tester — the TR139 — that lets you check any transistor or diode in-circuit without disconnecting a single lead. Nothing could be simpler . . . or quicker!

**OUT OF CIRCUIT TESTS** . . . No need to remember two different test procedures for in-circuit and out of circuit testing, as the procedure is the same. The beta readings will, of course, be slightly more accurate when checked out of circuit. Transistors can be matched, sorted and selected, for specific required values of beta and $I_{CBO}$.

**BETA MEASUREMENTS.** Beta is the all-important gain factor of a transistor. The Sencore TR139 gives you the **true** AC beta reading on a large 6-inch meter. Just set the Cal knob and push a button. Actually measures the ratio of AC signal on the base of the transistor to that obtained on the collector.

**$I_{CBO}$ MEASUREMENTS.** The TR139 also gives you the leakage current (Icbo) of any transistor in microamps directly on the meter. This is highly important as many transistors have good beta but do not work in the circuit because the leakage current has changed or is too high.

**DIODE TESTS.** The NEW TR139 checks both rectifiers and diodes either in or out of the circuit. The in-circuit test gives a speedy "go or no go" indication. Out of circuit testing measures the actual front to back conduction in microamps.

**COMPLETE PROTECTION.** A special circuit in the TR139 protects even the most delicate transistors and diodes, even if the leads are accidentally hooked up to the wrong terminals of the transistor.

**NO SET-UP BOOK.** Just hook up any unknown transistor to the TR139. It will tell you beta and Icbo without so much as glancing at a set-up book or transistor manual. Determine PNP or NPN types at the flick of a switch.

**That's why the Sencore TR139 is the answer to servicing of today's complex transistorized equipment. Features compare to laboratory testers costing much more.**

*NO. 1 MANUFACTURER OF ELECTRONIC MAINTENANCE EQUIPMENT*